

**HALOACETIC ACIDS (HAA)  
and  
TOTAL TRIHALOMETHANES (TTHM)  
COMPLIANCE SAMPLING COLLECTION GUIDE**

Kansas Public Water Supply Systems  
using the  
Kansas Health and Environmental Laboratories



Prepared by  
Kansas Department of Health and Environment  
Bureau of Water  
Public Water Supply Section

January 2013

## HALOACETIC ACIDS (HAA) AND TOTAL TRIHALOMETHANES (TTHM) SAMPLING

Haloacetic acids (HAA) and total trihalomethanes (TTHM) monitoring requirements are part of the Disinfection By-product (DBP) Rule. DBP Rule monitoring requirements are stated in the Code of Federal Regulations 40 CFR 141.132, and can be found online at the Kansas Department of Health and Environment, Public Water Supply Section website <http://www.kdheks.gov/pws/index.html>.

The purpose of this document is to provide a quick guide for collecting HAA and TTHM samples. A Disinfection By-product Rule Survival Guide is available online at the KDHE, Public Water Supply Section website <http://www.kdheks.gov/pws/index.html>, and is a more extensive guide on all facets of the DBP Rule.

The Kansas Health and Environmental Laboratories (KHEL) is part of the Division of Environment under the Kansas Department of Health and Environment (KDHE).

The KHEL fee is \$125 for analyzing HAA compliance samples and \$40 for analyzing TTHM compliance samples.

### HAA Samples are analyzed for...

Table 1 lists the five haloacetic acids that make up the total HAA results.

Haloacetic Acids in an HAA Result
Monochloroacetic Acid
Dichloroacetic Acid
Trichloroacetic Acid
Monobromoacetic Acid
Dibromoacetic Acid

Table 1. Haloacetic Acids in a HAA Result

### TTHM Samples are analyzed for...

Table 2 lists the four trihalomethanes that make up the TTHM results.

Trihalomethanes included in a Total Trihalomethanes (TTHM) Result
Chloroform
Bromoform
Bromodichloromethane
Dibromochloromethane

Table 2. Trihalomethanes in a TTHM Result

## **Hyper-chlorination (Burnout)**

Collecting HAA or TTHM samples during hyper-chlorination of the distribution system (a “burnout”) is not recommended. As soon as your system is aware of a scheduled burnout date, you should call KDHE, Public Water Supply Section at 785-296-5946 to be sure that the due date of the HAA/TTHM samples and the scheduled burnout date do not conflict.

Many times HAA and TTHM sample kits are shipped out together in the same package. However, with the onset of the Stage 2 Disinfection By-product Rule, it is possible that different sampling locations will have different monitoring frequencies and some HAA and TTHM sample kits will be shipped separately.

## **What is in an HAA or TTHM Sample Kit from KHEL?**

### **HAA Sample Kit**

- Cooler shipping box
- One 120 cc amber glass bottle
- Ice packs
- Green return shipping label
- Sample collection procedure sheet
- Sample submission form

Figure 1-DBP is a picture of what is contained in an HAA sample kit from KHEL. A barcode on the sample collection bottle will have the system's KHEL account number, the bottle identification number and the letters "DF." The green return shipping label is to be placed on the outside of the package when ready to ship the sample back to KHEL. Also included in the sample kit are the collection instructions and the sample submission form that must be completed for each HAA sample.

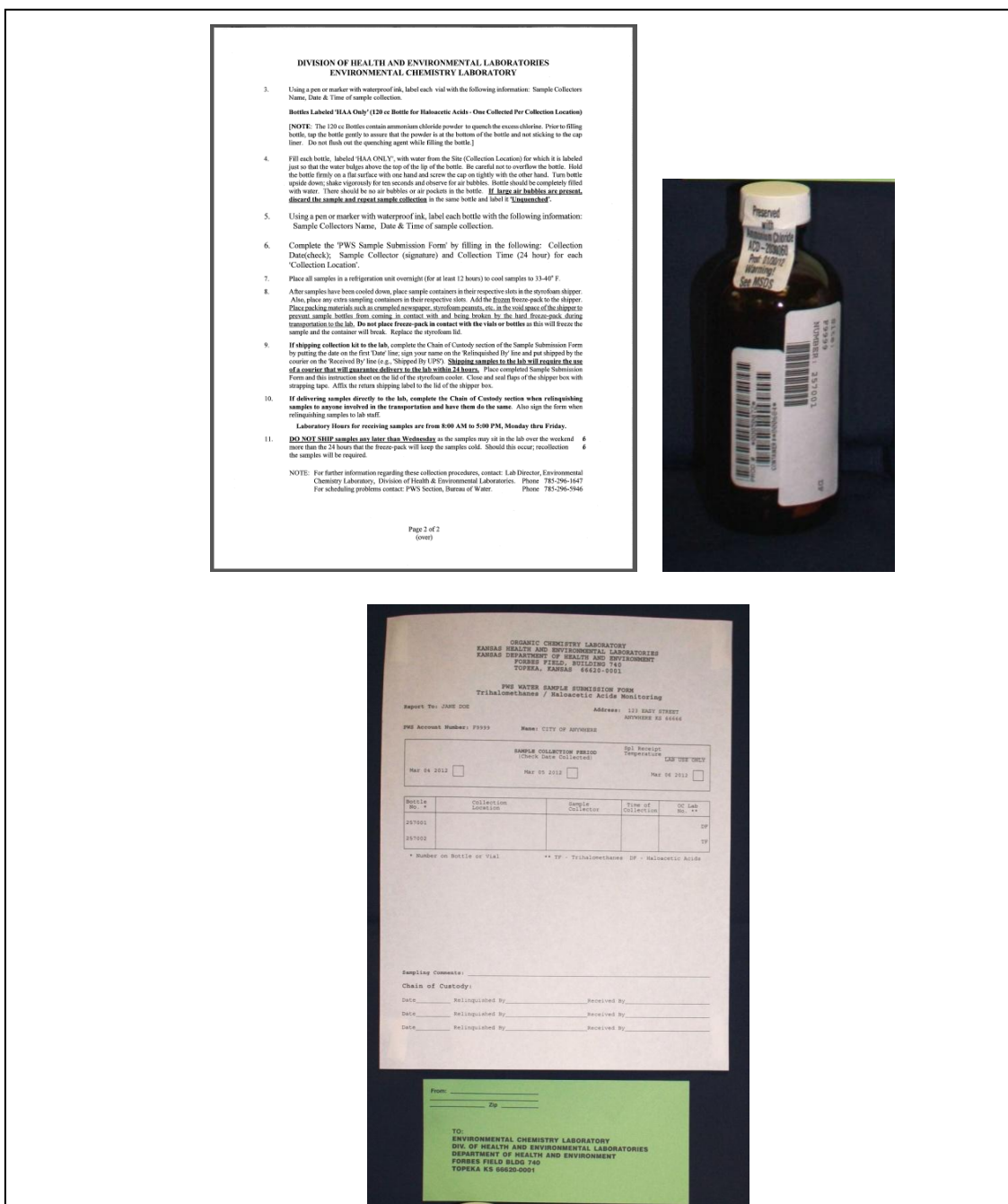


Figure 1-DBP. What Is Included in a HAA Sample Kit

## TTHM Sample Kit

- Cooler shipping box
- Two 40 cc clear glass vials
- Ice packs
- Green return shipping label
- Sample collection procedure sheet
- Sample submission form

Figure 2-DBP is a picture of what is contained in a TTHM sample kit from KHEL. A label with a barcode on the sample collection bottle will have the system's KHEL account number, the bottle identification number and the letters "TF." The green return shipping label is to be placed on the outside of the package when ready to ship the sample back to KHEL. Also included in the sample kit are the collection instructions and the sample submission form that must be completed for each TTHM sample.

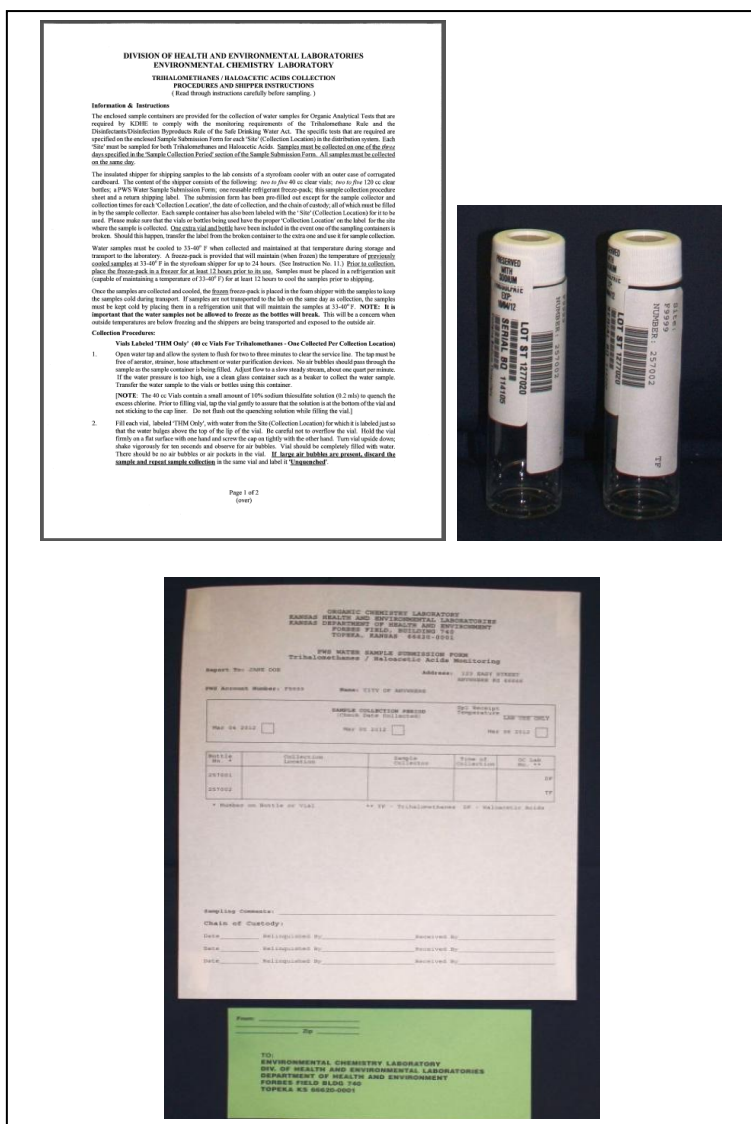


Figure 2-DBP. What Is Included in a TTHM Sample Kit

Figure 3-DBP is an example of a Haloacetic Acids/Total Trihalomethanes (HAA/TTHM) Sample Submission Form

ORGANIC CHEMISTRY LABORATORY  
KANSAS HEALTH AND ENVIRONMENTAL LABORATORIES  
KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT  
FORBES FIELD, BUILDING 740  
TOPEKA, KANSAS 66620-0001

**PWS WATER SAMPLE SUBMISSION FORM**  
**Trihalomethanes / Haloacetic Acids Monitoring**

Report To: JANE DOE Address: 123 EASY STREET  
ANYWHERE KS 66666

PWS Account Number: F9999 Name: CITY OF ANYWHERE

SAMPLE COLLECTION PERIOD (Check Date Collected)		Spl Receipt Temperature	LAB USE ONLY
Mar 04 2012	<input type="checkbox"/>	Mar 05 2012	<input type="checkbox"/>
Mar 06 2012	<input type="checkbox"/>		

Bottle No. *	Collection Location	Sample Collector	Time of Collection	OC Lab No. **
257001				DF
257002				TF

\* Number on Bottle or Vial      \*\* TF - Trihalomethanes DF - Haloacetic Acids

Sampling Comments: \_\_\_\_\_

Chain of Custody:

Date \_\_\_\_\_ Relinquished By \_\_\_\_\_ Received By \_\_\_\_\_

Date \_\_\_\_\_ Relinquished By \_\_\_\_\_ Received By \_\_\_\_\_

Date \_\_\_\_\_ Relinquished By \_\_\_\_\_ Received By \_\_\_\_\_

Figure 3-DBP. Example of an HAA/TTHM Sample Submission Form

## THE HAA/TTHM SAMPLE SUBMSISION FORM IN DETAIL

Figure 4-DBP indicates the header of the sample submission form which tells where the kit came from, and that the form is for submitting samples of trihalomethanes and/or haloacetic acids for a public water supply. The address in the header is the address of KHEL and will match the address on the green return shipping label that came with the kit.

ORGANIC CHEMISTRY LABORATORY KANSAS HEALTH AND ENVIRONMENTAL LABORATORIES KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT FORBES FIELD, BUILDING 740 TOPEKA, KANSAS 66620-0001
PWS WATER SAMPLE SUBMISSION FORM Trihalomethanes / Haloacetic Acids Monitoring

Figure 4-DBP. Header of the Sample Submission Form

Figure 5-DBP indicates the system's address information printed on the form.

Report To: JANE DOE	Address: 123 EASY STREET ANYWHERE KS 66666
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Figure 5-DBP. System Address on the Sample Submission Form

Figure 6-DBP has been highlighted to point out specific areas on the form.

The part highlighted in green indicates the system's KHEL account number.

The part highlighted in blue is the name of the system.

PWS Account Number: 79999	Name: CITY OF ANYWHERE
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Figure 6-DBP. System KHEL Account Number and Name

Figure 7-DBP indicates that the form presents the choice of three different dates for sample collection. Check the correct box for the date the sample is collected. If unable to collect on one of the three dates printed on the form, call the KDHE Public Water Supply Section at 785-296-5946 to see if it's possible for the scheduled collection dates to be changed.

<b>SAMPLE COLLECTION PERIOD</b> (Check Date Collected)			Spl Receipt Temperature
			<b>LAB USE ONLY</b>
Mar 04 2012	<input type="checkbox"/>	Mar 05 2012	<input type="checkbox"/>
		Mar 06 2012	<input type="checkbox"/>

Figure 7-DBP. Three Different Choices for Sample Collection Dates on the Sample Submission Form

Figure 8-DBP has been highlighted to point out specific areas on the form.

The part highlighted in yellow is the identification number of the bottle. The bottle ID number on the container should match the bottle ID number on the sample submission form. If they don't match, call KHEL at 785-296-1620 and notify them of the situation.

The part highlighted in green is the street address of the distribution tap from where the sample must be collected.

The part highlighted in blue is where the sample collector should write their name.

The part highlighted in purple is the same "DF" or "TF" code that also appears on the barcode label of the bottle.

Bottle No. *	Collection Location	Sample Collector	Time of Collection	OC Lab No. **
257001	Street Address			DF
257002				TF

Figure 8-DBP. Bottle ID and Collection Site ID on the Sample Submission Form



Figure 9-DBP indicates that the form has space for sample collection notes. If the sample collector has any comments about the sample they feel is important for the analysts at KHEL to know, they should write comments on the line labeled, “Sampling Comments.”

The “Chain of Custody” lines only need to be used if the sample is passing from the sample collector to someone other than the courier service that will be delivering the sample to KHEL.

Sampling Comments: _____		
Chain of Custody:		
Date _____	Relinquished By _____	Received By _____
Date _____	Relinquished By _____	Received By _____
Date _____	Relinquished By _____	Received By _____

Figure 9-DBP. Chain of Custody Section on the Sample Submission Form

## COLLECTING AND SHIPPING THE HAA/TTHM SAMPLE

HAA/TTHM samples must be chilled before shipping. Before collecting a HAA/TTHM sample, put the ice packs in the freezer. After collecting the HAA/TTHM sample, immediately place the bottle in the refrigerator to chill overnight. Make sure the sample does not freeze or the bottle will break.

The sample kit indicates that the samples must be collected on one of three dates that fall on a Sunday, Monday or Tuesday. The collected samples must reach KHEL no later than Wednesday the same week with only 24 hours in transit. Many systems pay for additional courier services (next day or priority shipping) to ensure their samples will be delivered on time. If unable to collect on one of the dates printed on the sample submission form, call KDHE, Bureau of Water, Public Water Supply Section at 785-296-5946 to see if it’s possible for the scheduled collection dates to be changed.

### Collecting the HAA or TTHM sample

Read through the sample collection instructions before collecting the sample. For questions or concerns about the sample collection process, call KHEL at 785-296-1620 for assistance.

HAA/TTHM monitoring samples are collected from sample taps within the distribution system. Listed on the sample submission form is the address location from which the sample needs to be collected.

### Shipping the HAA or TTHM sample

Place the sample and the freezer packs into the cooler in the shipping box. Place the completed sample submission form on top of the cooler lid. Tape the box shut. Secure the green return shipping label to the package. The sample must arrive at KHEL by Wednesday with only 24

hours in transit. Many systems pay for additional courier services (next day or priority shipping) to ensure their sample will be delivered on time.

If the sample container leaks it could arrive at KHEL empty or with not enough sample left to analyze. Many couriers will consider a wet package undeliverable and will discard it. Either of these scenarios would require the system to re-collect the sample.

### **SUMMARY OF HAA/TTHM SAMPLE COLLECTION**

- Upon receipt of the sample kit, open and review the appointed sample collection date.
- Check that bottle ID numbers, KHEL account number, and collection site addresses are correct.
- Place the ice packs in the freezer.
- Follow the sample collection instructions included with the sample kit.
- Fill out the sample submission form neatly and completely.
- Immediately after collecting the sample, place it in the refrigerator to chill overnight.
- Include the ice packs, the sample, and the completed sample submission form in the shipping package.
- Paying for additional courier services (overnight or priority shipping) may be necessary to ensure the sample is delivered to KHEL on time.
- Calling KDHE with questions or concerns you may have is highly encouraged.

For questions about your HAA/TTHM sample kit or the sample collection process, call KHEL at 785-296-1620.

For questions about the HAA/TTHM compliance or compliance monitoring schedule, call KDHE's Bureau of Water, Public Water Supply Section at 785-296-5946.